Gynecologic Oncology Reports 4 (2013) 20–22

Contents lists available at SciVerse ScienceDirect

Gynecologic Oncology Reports

journal homepage: www.elsevier.com/locate/gynor

Case Report

# Large volume cervical varix bleeding in a gravid patient

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ARTICLE INFO

*Article history:*
Received 28 September 2012
Accepted 5 December 2012
Available online 15 December 2012

*Keywords:*
Cervical varix
Gravidity
Hemorrhage
Patient management

## Introduction

Placenta previa, postpartum hemorrhage and placental abruption comprise the majority of bleeding related complications that contribute to maternal and perinatal morbidity and mortality [1,2]. Cervical varix associated with large volume bleeding, albeit extremely rare during pregnancy, can be a perplexing clinical dilemma for the treating physician.

Cervical varix manifests itself from varicose veins and may cause moderate to severe hemorrhage [3,4]. The severity of varices increases in gestation, primarily because the expanding uterine pelvic veins and inferior vena cava become compressed by the enlarging uterus [3,5,6]. Moreover, during pregnancy, the vascular system is significantly dilated in response to hormonal variations and increased blood volume.

The incidence of a cervical varix during pregnancy is extremely unusual, with very few reported cases [2,7,8]; thus, there is a paucity of data regarding diagnosis and optimal management [7]. We document the clinical diagnosis and expeditious management of a gravid patient who presented with a massive hemorrhage from cervical varix.

## Case

A 36-year-old, nulligravid, woman underwent an exploratory laparotomy and right salpingo-oophorectomy at an outside institution for a right ovarian mass in July 2009. Pathology was consistent with a stage IIC granulosa cell tumor of the ovary. She subsequently was referred to our gynecologic oncology service and underwent a diagnostic laparoscopy incorporating peritoneal and omental biopsies. The patient has been disease free since that time.

In August 2012, the patient, who was approximately 15 weeks pregnant, developed significant vaginal bleeding from an enlarging cervical lesion. She was again referred to our gynecologic oncology service for consideration of a biopsy; her CA-125 was 20.2 U/mL and Inhibin B was 10.1 pg/mL. An examination of the cervix revealed a 1 cm, polypoid erythematous lesion on the anterior cervix; cervical cytology was obtained.

The condition was clinically suspicious for a hemangioma although a malignancy could not be excluded. Therefore, the decision was made to perform a cervical biopsy, upon which an extensive amount of bleeding ensued. This could not be stanched in the office with pressure, Monsel's solution or directed suturing. The vagina was packed with gauze and the patient was subsequently admitted to the operating room for evaluation and management. Anesthesia and perinatal medicine were emergently consulted.

Trans-abdominal ultrasound of the pelvic structures with mapping via color Doppler, was performed in the operating room with vaginal packing; in situ, the Doppler study revealed a varix in the right anterior portion of the cervix that appeared to originate from the lower uterine segment (Fig. 1). Once the etiology of the bleeding was clarified, attention was directed at managing the condition. As the packing was removed, the bleeding resumed. Three sutures of 3-0 Vicryl on a SH needle were subsequently used to control the hemorrhage, but a small amount of oozing persisted.

Clinically, obtaining hemostasis was imperative but the options were limited. The combination of thrombin and Gelfoam® (Pfizer, Inc.; New York City, NY) was presumably less risky than continued sutures within the cervix. Thus, the decision was made to place Gelfoam, moistened with thrombin, against the cervix and apply directed pressure; excellent hemostasis was obtained. There were no apparent complications and estimated blood loss was 700 mL with an additional 400 mL in the office.

The patient was transfused with three units of packed red blood cells postoperatively. She was then accompanied to the Recovery Room in stable condition. The pathology results from the cervical biopsy revealed blood and scant fragments of endocervical mucosa. The patient's cervical cytology results were negative for an intraepithelial lesion or malignancy.

The patient was referred for maternal and fetal medicine consultation. Currently, she is doing very well; her ultrasound at 30 weeks was negative and the pregnancy is proceeding uneventfully.

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http://dx.doi.org/10.1016/j.gynor.2012.12.002

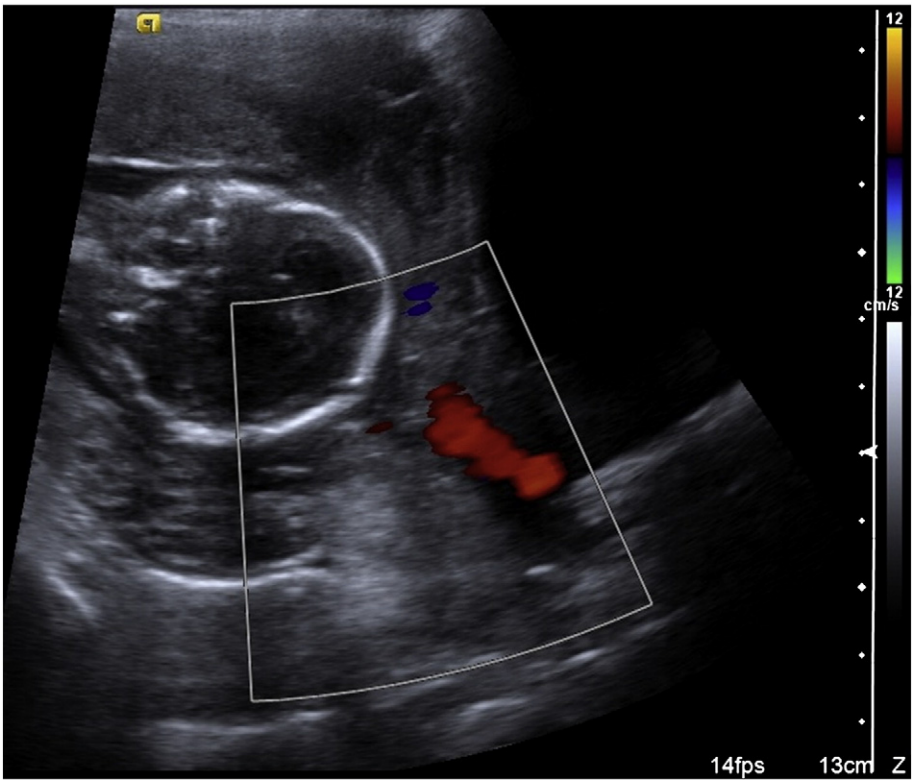


**Fig. 1.** Grayscale ultrasound with color Doppler demonstrates an abnormal color Doppler flow within the cervix, compatible with a cervical venous varix.

## Discussion

The sudden advent of hemorrhage during pregnancy can be associated with untoward obstetric outcomes, particularly when the etiology of the bleeding is not promptly determined [2]. Varices are infrequently a precipitant of significant bleeding during gravidity; interestingly, when the condition manifests itself, the lesions are typically encountered in the legs, vulva, and hemorrhoidal plexus but very rarely in the cervix [2]. Indeed, following a review of the literature, we were able to identify fewer than 10 documented cases [2,6,7].

Kumazawa et al. reported on a gravid patient in her third trimester who was afflicted with placenta previa totalis [7]; she developed a massive hemorrhage from a cervical varix. Clinical management included vaginal packing to stanch the bleeding although a cesarean delivery was necessary because of intractable uterine contractions. Ultimately, a favorable prognosis for both the patient and fetus was attained. In another study, a cervical varix was identified via power color Doppler ultrasound in a pregnant patient who was bleeding severely during her second trimester of pregnancy [6]. Following a cesarean delivery, the patient and neonate eventually achieved a normal outcome.

In the current report, we discuss a gravid patient of 15 weeks who, following a cervical biopsy, developed intractable bleeding. She was immediately taken to the operating room and evaluated with color Doppler pelvic trans-abdominal ultrasound imaging, whereon a diagnosis of cervical varix was made. Prompt clinical management comprised of suturing, thrombin, Gelfoam and consistent pressure achieved hemostasis.

The standard treatment for cervical varix during pregnancy is indeterminate [7]; for asymptomatic patients, expectant management and bed rest are reasonable. A cesarean section at term may be performed because of the risk for hemorrhage with a vaginal delivery. In the event of significant bleeding, emergent vaginal packing can be temporarily effective, as in the present study and with previously reported cases [2,8,9]. Direct operative control is ultimately required. In select circumstances (i.e., severe or extremely symptomatic patients), uterine artery embolization has been utilized postpartum [10], but the potential risks should be strongly considered when evaluating this approach.

In addition to a high degree of clinical suspicion, color Doppler ultrasound imaging may be useful in rendering the diagnosis of a cervical varix. When employing this diagnostic procedure, cervical varices may resemble tortuous tubules with a characteristic blood flow pattern [2].

The incidence of cervical varix is very rare. Nevertheless, in an attempt to mitigate maternal and/or perinatal morbidity or mortality, this clinical disorder should be included in the differential diagnosis for any gravid patient who presents with severe vaginal bleeding.

**Conflict of interest statement**
The authors have no conflicts of interest to declare.

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